

THERE IS CLAIMED:

- 1.** A secure method of deciding on the 0 or 1 state of each bit of a pattern repeated by a static communication channel in a data decompression device adapted to decompress a block of data including a group of data from a set of data frames compressed by a data compression device, said group including all the active channels of the set, it being understood that the frames have a structure defined in accordance with a plurality of time slots, each time slot of a first group of time slots is divided into a plurality of information bits carrying a respective communication channel, and the active state, respectively the static state, of each channel is assigned if the comparison of the content of this channel in the N bits compared between the N frames of a reference pattern with the corresponding N bits of the N frames of the analysis window, where applicable repeated L times, shows a variation in the content for at least one of the bits, respectively a stability of the content for all of the N bits, where N is an integer greater than or equal to 1,
which method includes:
 - a step of transmitting a descriptor specifying the static or active state of the transmission channel,
 - a step of transmitting the content of the channel that has gone to the static state on the L*N frames of the analysis window after it goes to the static state,
 - a step of statistical analysis, over the analysis window carrying the L*N frames after the channel changes to the static state, of the state of each bit of the pattern repeated by said channel, based on a majority vote of the states obtained for each bit of the channel considered on the L groups of frames in the analysis window, which statistical analysis is intended to reconstitute the original state of each bit of the pattern.
- 2.** The method claimed in 1, wherein a counter is associated with each bit carried by said channel and the statistical analysis step includes a step of initializing the counter at the start of the analysis window, a convention for incrementing or decrementing the counter being established in accordance with the successive binary values taken by each bit of the channel within the L groups, the sign of the final value of the counter deciding on the state present in the majority in the L groups.
- 3.** The method claimed in claim 2, wherein the number of bit transmission errors corresponding to the specified channel is identified by the following equation in

which $NT = L \cdot N$ corresponds to the number of frames contributing to the composition of an analysis window:

$$N_e = (1 + (NT/N) - |X|) / 2.$$

- 4.** The method claimed in claim 1, wherein the number of analysis windows used for the process of repeating the static pattern as a function of the existing transmission quality between the compression device and the decompression device is varied.
- 5.** The method claimed in claim 4, wherein information is integrated into a header of the block of data to specify the number of analysis windows used.
- 6.** The method claimed in claim 5, wherein the number of analysis windows used for the process of repeating the static pattern is updated as a function of the error rate measured on the connection.
- 7.** A data transmission system comprising a compressor and a decompressor and adapted to implement the method claimed in claim 1.